AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

1.   (Currently Amended) An automatic gain control device in an orthogonal frequency division multiplexing system, comprising:

a variable gain amplifier for controlling a gain of an input signal;

an analog to digital converter for converting the input signal into a digital signal, and providing the digital signal to an energy calculator;

[[an]]the energy calculator for calculating an energy of the inputdigital signal;

a truncator for accumulating the calculated energies, finding an average thereof, and generating a DC offset of the input signal;

a subtracter for subtracting a predefined reference value from the DC offset, and outputting a signal;

a pulse density modulation signal generator for processing the signal output by the subtracter to be a pulse density modulation signal; and

an RC filter for feeding the value output by the subtracterpulse density modulation signal generator back to the variable gain amplifier so that the value output by the subtracterpulse density modulation signal generator may be used for an automatic gain control.

2.   (Original) The automatic gain control device of claim 1, wherein the predefined reference value includes a reference power generated based on a saturation to RMS ratio for minimizing the bit error rate of the orthogonal frequency division multiplexing system.

3.   (Original) The automatic gain control device of claim 1, wherein the saturation to RMS ratio includes 4.0σ.

4.   (Original) The automatic gain control device of claim 1, wherein the energy for the automatic gain control is calculated for a training symbol interval of the input signal.

5.   (Original) The automatic gain control device of claim 1, wherein the energy calculator finds a summation of the square of the input signal, and outputs the same as energy.

6.   (Cancelled)

7.   (Currently Amended) An automatic gain control method in an orthogonal frequency division multiplexing system, comprising:

(a) converting, by an analog to digital convertor, an input signal into a digital signal, and providing the digital signal to an energy calculator;

[[(a)]](b) calculating, by the energy calculator, an energy of ~~an input~~the digital signal;

[[(b)]](c) accumulating the calculated energies, finding an average thereof, and generating a DC offset of the input signal;

[[(c)]](d) subtracting, by a subtractor, a predefined reference value from the DC offset, and outputting a signal;

(e) processing, by a pulse density modulation signal generator, the signal output by the subtracter to be a pulse density modulation signal; and

[[(d)]](f) feeding, by an RC filter, the ~~output~~pulse density modulation signal back to another input signal to be provided after the above-noted input signal so that the output value may be used for an automatic gain control.

8.   (Currently Amended) The automatic gain control method of claim 7,

further comprising: [[(e)]](g) using a saturation to RMS ratio which minimizes the bit error rate of the orthogonal frequency division multiplexing system, and generating the reference power.

9.   (Currently Amended) The automatic gain control method of claim 8, wherein [[(a)]](b) comprises: finding a summation of the square of the input signal and outputting the same as energy.